



**NEW ENGLAND
COMMON ASSESSMENT PROGRAM**

**Released Items
Support Materials
2013**

**Grade 3
Mathematics**

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

N&O 2.1 Demonstrates conceptual understanding of rational numbers with respect to: whole numbers from 0 to 199 using place value, by applying the concepts of equivalency in composing or decomposing numbers (e.g., $34 = 17 + 17$; $34 = 29 + 5$); and in expanded notation (e.g., $141 = 1 \text{ hundred} + 4 \text{ tens} + 1 \text{ one}$ or $141 = 100 + 40 + 1$) **using models, explanations, or other representations**; and **positive fractional numbers** (benchmark fractions: $a/2$, $a/3$, or $a/4$, where a is a whole number greater than 0 and less than or equal to the denominator) as a part to whole relationship in area and set models where the denominator is equal to the number of parts in the whole **using models, explanations, or other representations**.

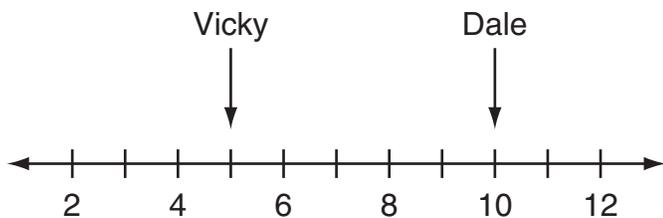


- 1 There are 32 children on a bus. Some children are sitting on the left side of the bus and some children are sitting on the right side of the bus. How many children might be on each side of the bus?
- A. 30 on the left and 12 on the right
 - B. 12 on the left and 20 on the right
 - C. 26 on the left and 16 on the right
 - D. 32 on the left and 32 on the right

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

N&O 2.2 Demonstrates understanding of the relative magnitude of numbers from 0 to 199 by ordering whole numbers; by comparing whole numbers to each other or to benchmark whole numbers (10, 25, 50, 75, 100, 125, 150, or 175); by demonstrating an understanding of the relation of inequality when comparing whole numbers by using “1 more”, “1 less”, “10 more”, “10 less”, “100 more”, or “100 less”; or by connecting number words and numerals to the quantities they represent using models, number lines, or explanations.

- 2 This number line shows the number of baseball cards Vicky and Dale each have.



Russell has **more** cards than Vicky and **fewer** cards than Dale. Which list shows only the numbers of baseball cards Russell could have?

- A. 6, 7, 8, 9
- B. 5, 6, 7, 8, 9, 10
- C. 2, 3, 4, 5, 6, 7, 8, 9
- D. 6, 7, 8, 9, 10, 11, 12

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

N&O 2.3 Demonstrates conceptual understanding of mathematical operations involving addition and subtraction of whole numbers by solving problems involving joining actions, separating actions, part-part whole relationships, and comparison situations; and addition of multiple one-digit whole numbers.



3 Max, Seth, and Pedro each have some markers.

- Max has 3 markers.
- Seth has 2 **fewer** markers than Max.
- Pedro has 5 **more** markers than Seth.

How many markers does Pedro have?

- A. 1
- B. 5
- C. 6
- D. 10

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

N&O 2.3 Demonstrates conceptual understanding of mathematical operations involving addition and subtraction of whole numbers by solving problems involving joining actions, separating actions, part-part whole relationships, and comparison situations; and addition of multiple one-digit whole numbers.



- 4 Laura has 6 dolls. How many more dolls does Laura need so she has 25 dolls altogether?
- A. 19
 - B. 21
 - C. 29
 - D. 31

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

N&O 2.5 Demonstrates understanding of monetary value by adding coins together to a value no greater than \$1.99 and representing the result in dollar notation; making change from \$1.00 or less, or recognizing equivalent coin representations of the same value (values up to \$1.99).



- 5 Jennifer bought a pencil that costs \$0.37. She paid with two quarters. Which set of coins shows the correct amount of change Jennifer received?

A. 

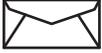
B. 

C. 

D. 

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

G&M 2.1 Uses properties, attributes, composition, or decomposition to sort or classify polygons or objects by a combination of two or more nonmeasurable or measurable attributes.

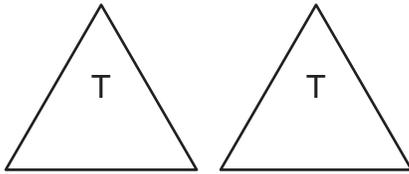
- 6 You may use the shapes from your envelope to help you answer this question. 

Lilly put two shapes next to each other without any gaps or overlaps to make a new shape.

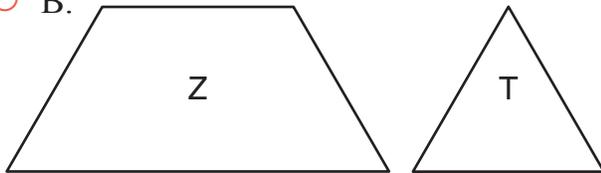
- The new shape has exactly four sides.
- All four sides are the same length.

Which two shapes did Lilly use?

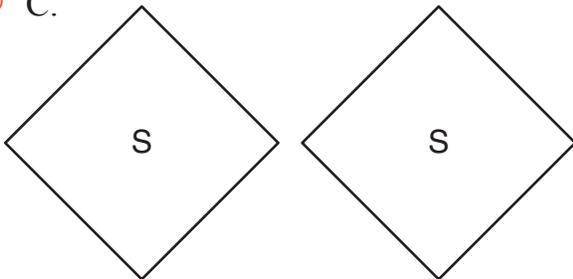
A.



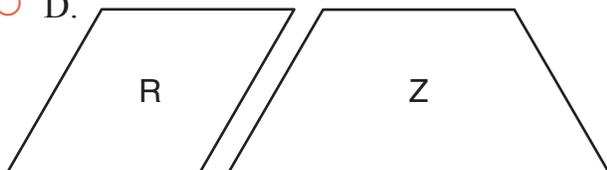
B.



C.



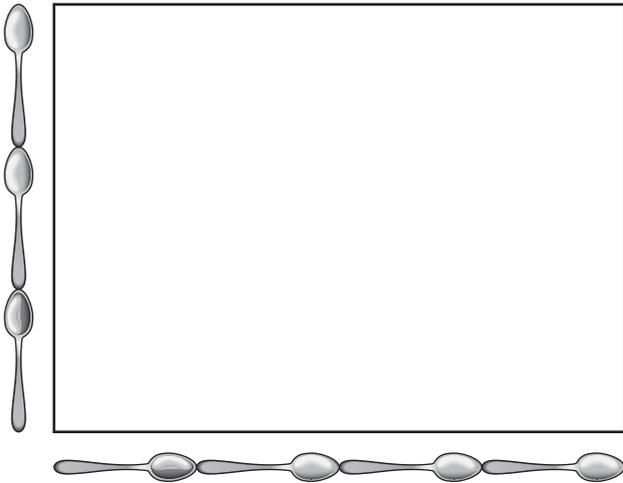
D.



NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

G&M 2.6 Demonstrates conceptual understanding of perimeter and area by using models or manipulatives to surround and cover polygons.

- 7 Sharon is using spoons to measure the perimeter of this rectangle.



What is the perimeter of this rectangle in spoons?

- A. 7
- B. 12
- C. 14
- D. 16

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

F&A 2.4 Demonstrates conceptual understanding of equality by finding the value that will make an open sentence true (e.g., $2 + \square = 7$). (limited to one operation and limited to use addition or subtraction)

- 8 Look at this number sentence.

$$10 - 6 = \square - 1$$

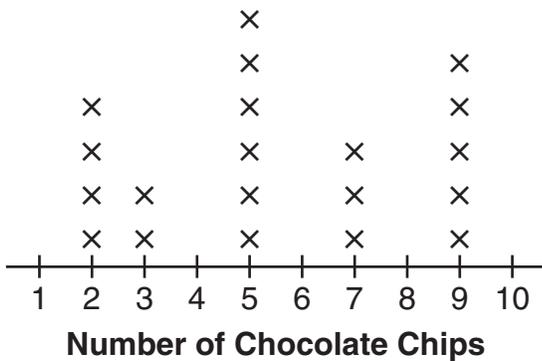
What number makes this number sentence true?

- A. 3
- B. 4
- C. 5
- D. 6

DSP 2.2 Analyzes patterns, trends, or distributions in data in a variety of contexts by determining or using more, less, or equal.

- 9 This line plot shows the number of chocolate chips in each bag of snack mix sold at a store.

Snack Mix



Key
× represents 1 bag

How many more bags had 5 chocolate chips than had 2 chocolate chips?

- A. 2
- B. 3
- C. 6
- D. 7

**NECAP 2013 RELEASED ITEMS
GRADE 3 MATH**

DSP 2.2 Analyzes patterns, trends, or distributions in data in a variety of contexts by determining or using more, less, or equal.

10 Mrs. Anderson made a pictograph to show the numbers of elephants at three different zoos. She used this information to make the pictograph.

- Park Zoo has 4 elephants.
- King Zoo has 1 fewer elephant than Park Zoo.
- Hill Zoo has 2 elephants.

Which pictograph did Mrs. Anderson make?

Elephants

Zoo	Number of Elephants
Park Zoo	
King Zoo	
Hill Zoo	

A.

Key

 represents 1 elephant

Elephants

Zoo	Number of Elephants
Park Zoo	
King Zoo	
Hill Zoo	

B.

Key

 represents 1 elephant

Elephants

Zoo	Number of Elephants
Park Zoo	
King Zoo	
Hill Zoo	

C.

Key

 represents 1 elephant

Elephants

Zoo	Number of Elephants
Park Zoo	
King Zoo	
Hill Zoo	

D.

Key

 represents 1 elephant

**NECAP 2013 RELEASED ITEMS
GRADE 3 MATH**

N&O 2.5 Demonstrates understanding of monetary value by adding coins together to a value no greater than \$1.99 and representing the result in dollar notation; making change from \$1.00 or less, or recognizing equivalent coin representations of the same value (values up to \$1.99).

- 11 Tyrone will give **exactly** 47¢ to his friend. Show or name a set of coins that Tyrone could give to his friend.

Scoring Guide:

Score	Description
1	Student shows or names a set of coins equaling 47¢.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 1
(EXAMPLE A)

- 11 Tyrone will give **exactly** 47¢ to his friend. Show or name a set of coins that Tyrone could give to his friend.

4 dimes
1 nickel
2 pennys

The student's response is correct.

SCORE POINT 1
(EXAMPLE B)

- 11 Tyrone will give **exactly** 47¢ to his friend. Show or name a set of coins that Tyrone could give to his friend.

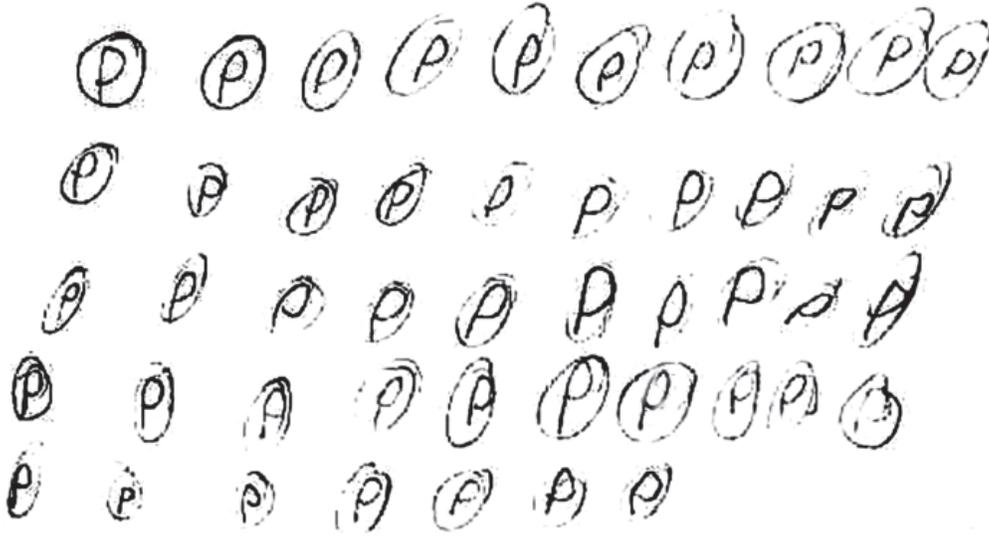
25¢ 10¢ 10¢
1¢ 1¢ = 47¢

The student's response is correct.

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 1
(EXAMPLE C)

- 11 Tyrone will give **exactly** 47¢ to his friend. Show or name a set of coins that Tyrone could give to his friend.



The student's response is correct.

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 0
(EXAMPLE A)

- 11 Tyrone will give **exactly** 47¢ to his friend. Show or name a set of coins that Tyrone could give to his friend.



The student's response is incorrect.

SCORE POINT 0
(EXAMPLE B)

- 11 Tyrone will give **exactly** 47¢ to his friend. Show or name a set of coins that Tyrone could give to his friend.

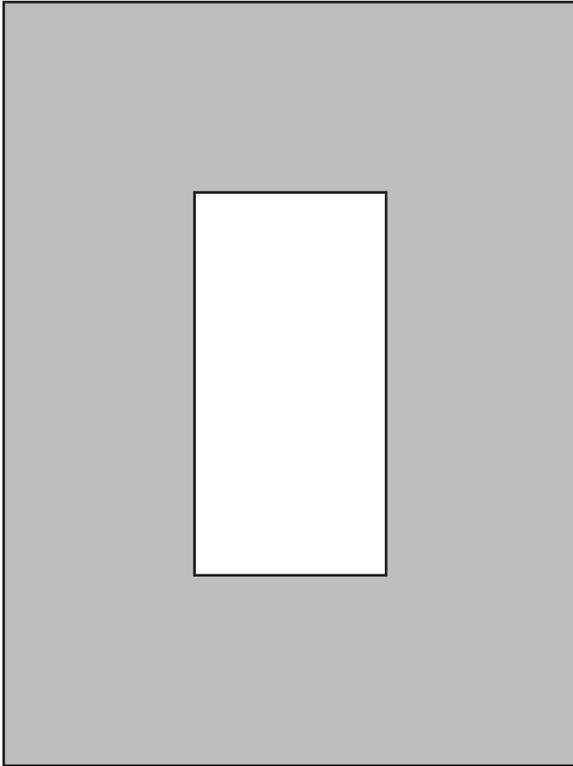
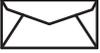


The student's response is incorrect. Student does not indicate that each circle represents a penny.

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

G&M 2.6 Demonstrates conceptual understanding of perimeter and area by using models or manipulatives to surround and cover polygons.

- 12 Use the square-inch tiles from your envelope to find the area of the shape shaded gray.



What is the area of the shape shaded gray? Write your answer on the line below.

_____ square inches

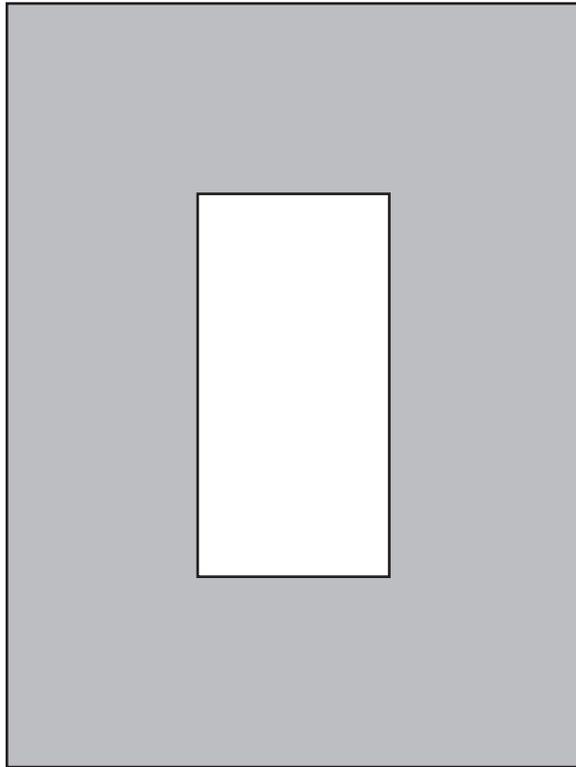
Scoring Guide:

Score	Description
1	for correct answer, 10
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 1
(EXAMPLE A)

- 12 Use the square-inch tiles from your envelope to find the area of the shape shaded gray.



What is the area of the shape shaded gray? Write your answer on the line below.

10

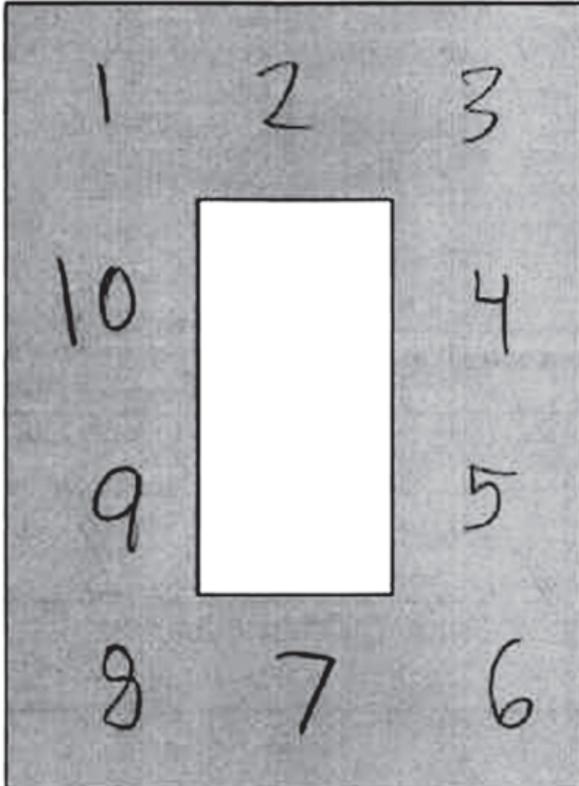
_____ square inches

The student's response is correct.

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 1
(EXAMPLE B)

- 12 Use the square-inch tiles from your envelope to find the area of the shape shaded gray. 



What is the area of the shape shaded gray? Write your answer on the line below.

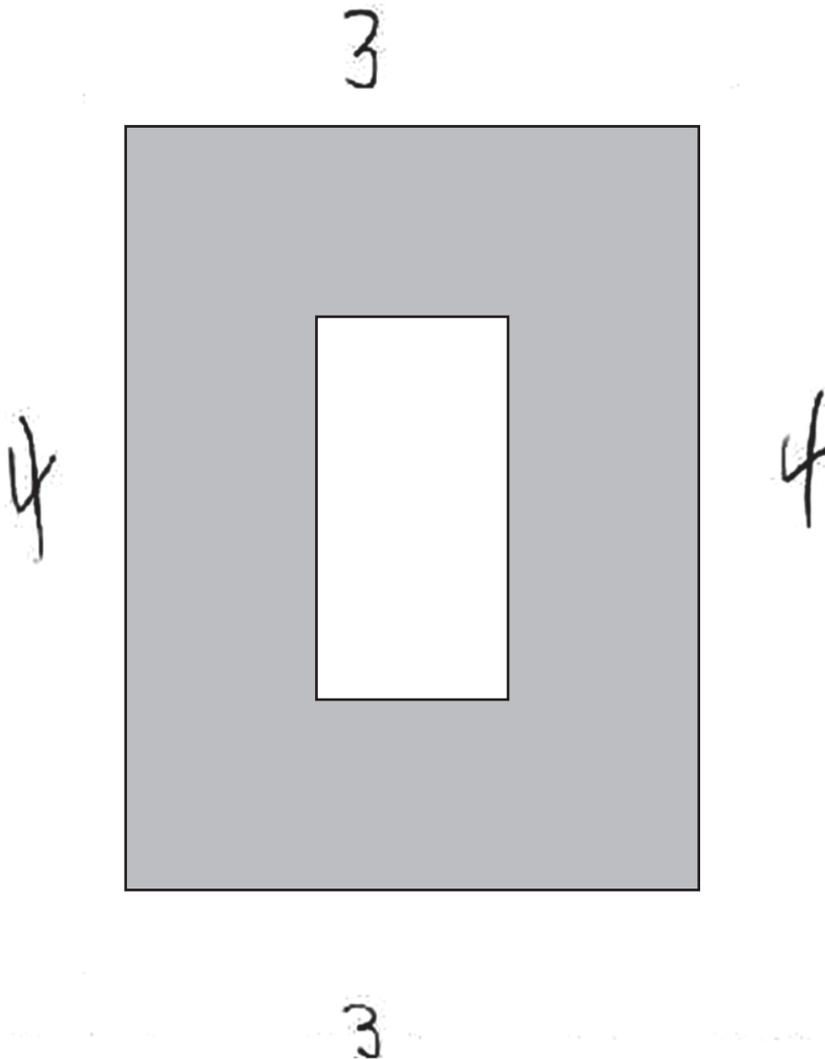
10 square inches

The student's response is correct. (Showing work is not required.)

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 0

- 12 Use the square-inch tiles from your envelope to find the area of the shape shaded gray. 



What is the area of the shape shaded gray? Write your answer on the line below.

4343 square inches

The student's response is incorrect.

**NECAP 2013 RELEASED ITEMS
GRADE 3 MATH**

DSP 2.1 Interprets a given representation (pictographs with one-to-one correspondence, line plots, tally charts, or tables) to answer questions related to the data, or to analyze the data to formulate conclusions. (IMPORTANT: *Analyzes data consistent with concepts and skills in M(DSP)–2–2.*)

- 13 This tally chart shows the number of students in three different classes.

Class	Number of Students
Mr. Harrison's	
Miss Kay's	
Mrs. Garcia's	

Rosa said, "I can use this tally chart to tell how many **boys** are in Miss Kay's class." Explain why Rosa's statement is correct or why Rosa's statement is incorrect.

Scoring Guide:

Score	Description
1	Student gives a correct explanation.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 1

- 13 This tally chart shows the number of students in three different classes.

Class	Number of Students
Mr. Harrison's	
Miss Kay's	
Mrs. Garcia's	

Rosa said, "I can use this tally chart to tell how many **boys** are in Miss Kay's class." Explain why Rosa's statement is correct or why Rosa's statement is incorrect.

Rosa's statement is incorrect because it doesn't tell which student are boys and which students are girls.

The student's explanation is correct.

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 0

- 13 This tally chart shows the number of students in three different classes.

Class	Number of Students
Mr. Harrison's	
Miss Kay's	
Mrs. Garcia's	

Rosa said, "I can use this tally chart to tell how many **boys** are in Miss Kay's class." Explain why Rosa's statement is correct or why Rosa's statement is incorrect.

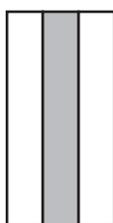
I think they're more boys
because they're are so
many boys in the
world.

The student's explanation is incorrect.

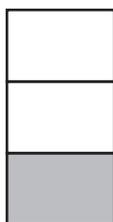
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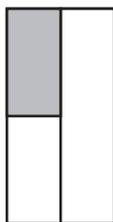
- 14 Four students shaded these shapes gray to show $\frac{1}{3}$ of a whole.



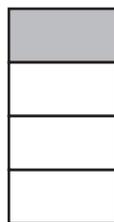
Eva



Zach



Ginny



Walter

Which students showed $\frac{1}{3}$ correctly? Explain how you know.

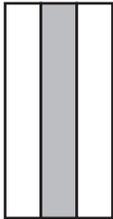
Scoring Guide:

Score	Description
2	for correct answer, Eva and Zach , with sufficient explanation
1	for correct answer, Eva and Zach , with insufficient or no explanation given OR for sufficient explanation with missing answer
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response

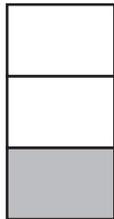
NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 2
(EXAMPLE A)

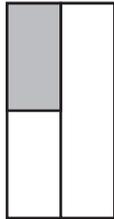
- 14 Four students shaded these shapes gray to show $\frac{1}{3}$ of a whole.



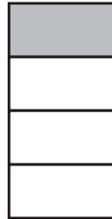
Eva



Zach



Ginny



Walter

Which students showed $\frac{1}{3}$ correctly? Explain how you know.

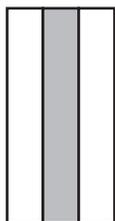
Eva and Zach got it
correctly because
they made only three parts
and they were all equal
with only one part
shaded.

The student's response is correct, with sufficient explanation given.

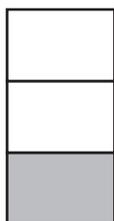
NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 2
(EXAMPLE B)

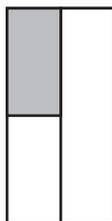
- 14 Four students shaded these shapes gray to show $\frac{1}{3}$ of a whole.



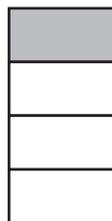
Eva



Zach



Ginny



Walter

Which students showed $\frac{1}{3}$ correctly? Explain how you know.

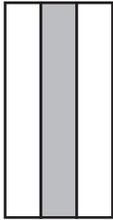
Eva and Zach showed $\frac{1}{3}$ correctly.
I know that because 1. all parts
are equal, 2. 1 part of the 3 parts
are shaded.

The student's response is correct, with sufficient explanation given.

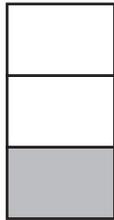
NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 2
(EXAMPLE C)

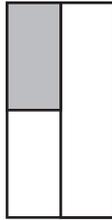
- 14 Four students shaded these shapes gray to show $\frac{1}{3}$ of a whole.



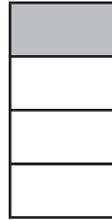
Eva



Zach



Ginny



Walter

Which students showed $\frac{1}{3}$ correctly? Explain how you know.

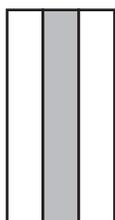
eva and zach showed $\frac{1}{3}$
right because Ginny's
isnt even, and walter's
isnt $\frac{1}{3}$, its $\frac{1}{4}$.

The student's response is correct, with sufficient explanation given.

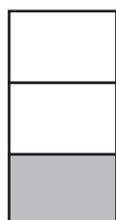
NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 1
(EXAMPLE A)

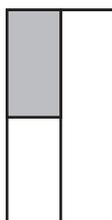
- 14 Four students shaded these shapes gray to show $\frac{1}{3}$ of a whole.



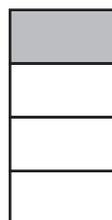
Eva



Zach



Ginny



Walter

Which students showed $\frac{1}{3}$ correctly? Explain how you know.

Eva Zach

I know because

Eva and zach both have

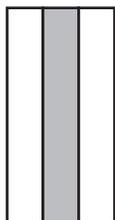
3 and 1 is shaded in.

The student's response is correct, with insufficient explanation. Student must have the concept of three equal parts in explanation.

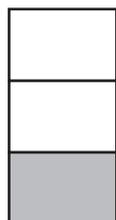
NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 1
(EXAMPLE B)

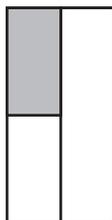
- 14 Four students shaded these shapes gray to show $\frac{1}{3}$ of a whole.



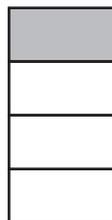
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Which students showed $\frac{1}{3}$ correctly? Explain how you know.

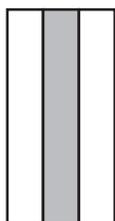
Zach did three
equal peaces and
shaded one.

The student's response is incorrect, with a sufficient explanation.

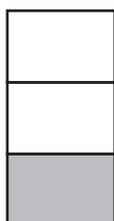
NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 0
(EXAMPLE A)

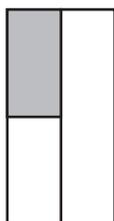
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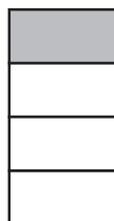
Eva



Zach



Ginny



Walter

Which students showed $\frac{1}{3}$ correctly? Explain how you know.

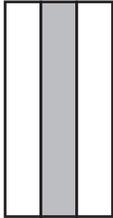
Walter has $\frac{1}{3}$ how 1 is shaded and 3 is not.

The student's response is incorrect, with an incorrect explanation.

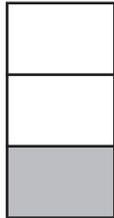
NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 0
(EXAMPLE B)

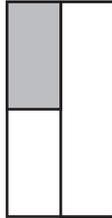
- 14 Four students shaded these shapes gray to show $\frac{1}{3}$ of a whole.



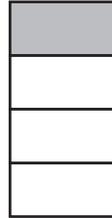
Eva



Zach



Ginny



Walter

Which students showed $\frac{1}{3}$ correctly? Explain how you know.

Eva, Zach, and Ginny had $\frac{1}{3}$
correctly because the each had
three things and one was colored
in.

The student's response is incorrect, with an incorrect explanation.

**NECAP 2013 RELEASED ITEMS
GRADE 3 MATH**

N&O 2.2 Demonstrates understanding of the relative magnitude of numbers from 0 to 199 by ordering whole numbers; by comparing whole numbers to each other or to benchmark whole numbers (10, 25, 50, 75, 100, 125, 150, or 175); by demonstrating an understanding of the relation of inequality when comparing whole numbers by using “1 more”, “1 less”, “10 more”, “10 less”, “100 more”, or “100 less”; or by connecting number words and numerals to the quantities they represent using models, number lines, or explanations.

15 Look at this number line.



a. Circle the point on the number line that represents 10 more than 124.

b. What number is 100 less than the number you circled in part a?

Scoring Guide:

Score	Description
2	for correct answers in part a, 134 , and in part b, 34
1	for correct answer in part a only OR for correct answer in part b only OR for correct answer in part b based on an incorrect answer in part a
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 2

15 Look at this number line.



a. Circle the point on the number line that represents 10 more than 124.

Part a: The student's response is correct.

b. What number is 100 less than the number you circled in part a?

34

Part b: The student's response is correct.

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 1
(EXAMPLE A)

15 Look at this number line.



a. Circle the point on the number line that represents 10 more than 124.

Part a: The student's response is incorrect.

b. What number is 100 less than the number you circled in part a?

20

Part b: The student's response is correct based on the answer to part a.

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 1
(EXAMPLE B)

15 Look at this number line.



a. Circle the point on the number line that represents 10 more than 124.

Part a: The student's response is correct.

b. What number is 100 less than the number you circled in part a?

94

Part b: The student's response is incorrect.

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 0

- 15 Look at this number line.



- a. Circle the point on the number line that represents 10 more than 124.

Part a: The student's response is incorrect.

- b. What number is 100 less than the number you circled in part a?

It is 100

Part b: The student's response is incorrect.

**NECAP 2013 RELEASED ITEMS
GRADE 3 MATH**

F&A 2.1 Identifies and extends to specific cases a variety of patterns (linear and non-numeric) represented in models, tables, or sequences by extending the pattern to the next element, or finding a missing element (e.g., 2, 4, 6 ____, 10).

- 16 Latoya made this number pattern. She covered some of the numbers with shapes.

14, , 22, 26, 30, 

a. What number did Latoya cover with ?

b. What number did Latoya cover with ?

Scoring Guide:

Score	Description
2	for correct answers in part a, 18 , and part b, 34
1	for correct answer in part a only OR for correct answer in part b only OR for reversing answers in part a and part b
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 2

- 16 Latoya made this number pattern. She covered some of the numbers with shapes.

14, , 22, 26, 30,

- a. What number did Latoya cover with ?

18

Part a: The student's response is correct.

- b. What number did Latoya cover with ?

34

Part b: The student's response is correct.

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 1
(EXAMPLE A)

- 16 Latoya made this number pattern. She covered some of the numbers with shapes.

14, , 22, 26, 30, 

- a. What number did Latoya cover with ?



Part a: The student's response is incorrect.

- b. What number did Latoya cover with ?



Part b: The student's response is correct.

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 1
(EXAMPLE B)

- 16 Latoya made this number pattern. She covered some of the numbers with shapes.

14, , 22, 26, 30,

- a. What number did Latoya cover with ?

34

The student reverses answers in part a and part b.

- b. What number did Latoya cover with ?

18

The student reverses answers in part a and part b.

NECAP 2013 RELEASED ITEMS
GRADE 3 MATH

SCORE POINT 0

- 16 Latoya made this number pattern. She covered some of the numbers with shapes.

14, , 22, 26, 30,

- a. What number did Latoya cover with ?

15

Part a: The student's response is incorrect.

- b. What number did Latoya cover with ?

31

Part b: The student's response is incorrect.

Grade 3 Mathematics Released Item Information – 2013

Released Item Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Tools Allowed	✓		✓	✓	✓											
Content Strand ¹	NO	NO	NO	NO	NO	GM	GM	FA	DP	DP	NO	GM	DP	NO	NO	FA
GLE Code	2-1	2-2	2-3	2-3	2-5	2-1	2-6	2-4	2-2	2-2	2-5	2-6	2-1	2-1	2-2	2-1
Depth of Knowledge Code	2	2	2	2	2	2	2	2	2	2	2	1	3	2	2	2
Item Type ²	MC	SA	SA	SA	SA	SA	SA									
Answer Key	B	A	C	A	A	A	C	C	A	C						
Total Possible Points	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2

¹Content Strand: NO = Numbers & Operations, GM = Geometry & Measurement, FA = Functions & Algebra, DP = Data, Statistics, & Probability

²Item Type: MC = Multiple Choice, SA = Short Answer